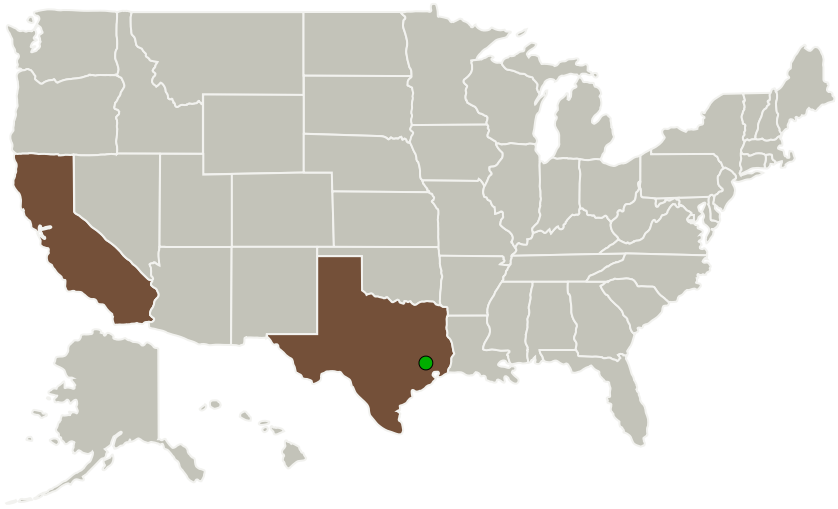
Novel Fluid Preservation System, Phase II

Completed Technology Project (2011 - 2013)

Project Introduction

To address NASA's need for a method to preserve human biological samples, mostly blood and urine, from astronauts collected during flight under ambient conditions, ChromoLogic (CL) has developed a novel Fluid Preservation System (FPS). FPS is based on collecting and sealing fluids in a sterile, hermetically sealed volume, with automatic separation of supernatant fluid where necessary. The unique microfluidic and medical expertise of CL scientists has resulted in an innovative and lightweight fluid storage system that utilizes compact and rugged microfluidic chips and novel valve technology that are capable of processing ~10ml of samples in a few minutes using on-board processing equipment. In Phase I CL has demonstrated the feasibility of the FPS technology by building prototype chips and demonstrating the proof of concept of pumping, separation, storage and preservation. The FPS has been demonstrated to be able to store blood plasma at room temperature for 54+ days. In Phase II CL will develop a fully functional system that will be FDA approved and space qualified.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
ChromoLogic, LLC	Lead Organization	Industry Minority-Owned Business	Monrovia, California
Johnson Space Center(JSC)	Supporting Organization	NASA Center	Houston, Texas

Primary U.S. Work Locations	
California	Texas

Project Transitions

June 2011: Project Start

June 2013: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139181)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

ChromoLogic, LLC

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Naresh Menon

Co-Investigator:

Naresh Menon

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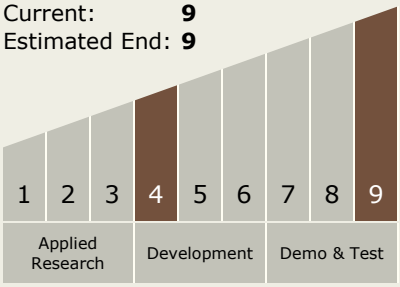
Technology Maturity (TRL)

Start: **4**
Current: **9**
Estimated End: **9**



Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.3 Human Health and Performance
    - TX06.3.1 Medical Diagnosis and Prognosis

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System